

No.

200200105



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Western Plant Breeders, Inc.*

*Whereas*, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Challis'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighteenth day of April, in the year two thousand two.*

*Attest:*

*Richard M. Johnson*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*William B. Egan*

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Western Plant Breeders, Inc.</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>BZ 692-108</b>		3. VARIETY NAME <b>Challis</b>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>8111 Timberline Drive Bozeman, MT 59718</b>		5. TELEPHONE (include area code) <b>406-587-1218</b>		FOR OFFICIAL USE ONLY <b>20020010</b> FILING DATE <b>2/20/2002</b>	
		6. FAX (include area code) <b>406-586-8247</b>			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>Corporation</b>		8. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>Arizona</b>		9. DATE OF INCORPORATION <b>Aug. 24, 1990</b>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <b>Dale R. Clark Western Plant Breeders, Inc. 8111 Timberline Drive Bozeman, MT 59718</b>				FILING AND EXAMINATION FEES: <b>\$ 2705.00</b> DATE <b>2/20/2002</b> CERTIFICATION FEE: <b>\$ 320.00</b> DATE <b>4/8/02</b>	
11. TELEPHONE (Include area code) <b>406-587-1218</b>		12. FAX (Include area code) <b>406-586-8247</b>		13. E-MAIL <b>dclark@westbred.com</b>	
				14. CROP KIND (Common Name) <b>Wheat</b>	
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)				19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety				<input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no," go to item 22)	
b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness				20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety				IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional)				21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership				IF YES, SPECIFY THE NUMBER 1, 2, 3, etc. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)				(If additional explanation is necessary, please use the space indicated on the reverse.)	
g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)					
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <b>March, 2001</b> <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)				23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER <b>Dale R. Clark for Western Plant Breeders</b>			SIGNATURE OF OWNER <b>Dan Biggerstaff</b>		
NAME (Please print or type) <b>Dale R. Clark</b>			NAME (Please print or type) <b>Dan Biggerstaff</b>		
CAPACITY OR TITLE <b>Barley &amp; Wheat Breeder</b>		DATE <b>Feb. 18, 2002</b>		CAPACITY OR TITLE <b>Vice Pres. Research</b>	
				DATE <b>2/18/2002</b>	

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one copy for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**Plant Variety Protection Office**

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvp.htm>

**ITEM**

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
21. See Section 83 of the Act for the Contents and Term of Plant Variety Protection.
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.

**21. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

**22. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

**23. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

S&T-470 (2-99) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (6-98) which is obsolete.

**“Challis”**  
Soft White Spring Wheat

**16.a. Exhibit A. Origin and Breeding History**

“Challis” (Exp. # BZ 692-108) is a soft white spring wheat that originated from the cross of “Penawawa x Edwall”, made near Phoenix, AZ in March 1991. The F1 plants were grown near Bozeman, MT during the summer of 1991 and the F2 seed harvested in September 1991. The F2 seed was planted near Phoenix in Nov. 1991 and single F2 heads were harvested in late April 1992. F3 head rows were planted in May 1992 near Bozeman. Agronomically acceptable F3 rows were selected and this particular row was given the designation BZ 692-108. Protein and protein quality (the SDS sedimentation test) analysis for cookie & cake (pastry) type quality were conducted on selected lines prior to advancing to yield trials. Yield trials, along with quality analysis, were conducted on the F4 thru F9 generations in Western Plant Breeders’ Pacific Northwest spring wheat trials. Besides being selected for low protein, low sedimentation levels, high cookie spread (Table 2.) and high yield, Challis was also evaluated and selected for suitable agronomic characteristics (see Table 1.) such as, plant height and resistance to lodging. Challis was also selected for resistance and/or tolerance to leaf rust, stripe rust and mildew.

Heads were selected from the F4 plot in the fall of 1993 and planted as head rows near Bozeman in the spring of 1994. Uniform head rows were individually harvested and tested for quality. Uniform selections were planted as individual 5’ x 20’ F5 plots in the spring of 1995 and uniform lines harvested individually in the fall. Four selected lines were planted in larger increase F6 plots in the spring of 1996 and planted in yield trials at 5 locations in Western Plant Breeders’ yield trials in the Pacific Northwest. One line, designated BZ 692-108-b was the better of the four lines in agronomic and quality performance. 100 heads were selected from the F6 increase plot in the fall of 1996. Seed from these heads were planted as F7 head rows near Bozeman, MT in May 1997. Uniform rows were harvested and bulked in September 1997. This seed was used to plant one-quarter acre near Bozeman in May 1998. Seed of this production was harvested in August 1998 and designated “Breeders” seed. This seed was used to plant approximately 5 acres near Bozeman in May 1999. . This production was harvested in the fall of 1999 and designated “Foundation” seed. Foundation seed was planted in the spring of 2000 to produce Registered and Certified seed. Certified seed was first available to growers in March of 2001.

**“Challis”**  
Soft White Spring Wheat

200200105

A variant that is similar to “Challis”, but is 4 to 8 inches taller, occurs at a frequency of up to .08% (8 per 10,000 plants). Also, a red seed variant occurs at a frequency of up to .16% (16 per 10,000). Otherwise, “Challis” is a stable and uniform variety in appearance and performance across several generations (F4 to F9) and growing conditions.

**16.b. Exhibit B. Statement of Distinctness**

Challis is most similar to the variety Penawawa. However, Challis is uniform for the gluten gene *Glu-1D<sub>2+12</sub>* allele, as compared to Penawawa, which is uniform for the *Glu-1D<sub>5+10</sub>* allele. The *Glu-1D<sub>5+10</sub>* allele is responsible for a stronger type of gluten and this is not desirable when baking pastries. Also, the seed of Challis is ovate in shape while that of Penawawa is elliptical.

The above comparison, along with the complete Objective Description (Exhibit C) shows Challis to be a novel variety of soft white spring wheat.

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**Table 1. Agronomic and quality characteristics of Challis compared to check varieties in Western Plant Breeders' trials 1998-2000 (avg. of 15 locations).**

<u>Entry</u>	<u>Heading Date from 7/1</u>	<u>Plt. Ht. (inches)</u>	<u>T.W. (lbs/bu)</u>	<u>Protein %</u>	<u>SED (mm)</u>	<u>3yr avg bu/ac</u>
Challis	7	36	60.6	11.4	57	113
Vanna	7	36	59.3	11.1	68	106
Penawawa	7	35	60.4	12.0	75	107
Alpowa	7	37	61.4	11.7	78	110
Treasure	9	35	59.2	11.1	52	100

**REPRODUCE LOCALLY. Include form number and date on all reproductions.**

Form Approved - OMB No. 0581-00

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

EXHIBIT C  
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S)	FOR OFFICIAL USE ONLY
Western Plant Breeders, Inc.	PVPO NUMBER
ADDRESS (Street and No. or RD No., City, State, and Zip Code)	200200105
8111 Timberline Drive Bozeman, MT 59718	VARIETY NAME
	Challis
	TEMPORARY OR EXPERIMENTAL DESIGNATION

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.    or   ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

1=Common

2=Durum

3=Club

4=Other (SPECIFY):

2. VERNALIZATION:

1=Spring

2=Winter

3=Other (SPECIFY):

3. COLEOPTILE ANTHOCYANIN:

1=Absent

2=Present

4. JUVENILE PLANT GROWTH:

1=Prostrate

2=Semi-erect

3=Erect

5. PLANT COLOR (boot stage):

1 = Yellow-Green

2 = Green

3 = Blue-Green

6. FLAG LEAF (boot stage):

1 = Erect

2 = Recurved

1 = Not Twisted

2 = Twisted

7. EAR EMERGENCE:

Number of Days Earlier Than Treasure

Number of Days Later Than Vanna

## 8. ANTHOR COLOR:

1 = Yellow

2 = Purple

## 9. PLANT HEIGHT (from soil to top of head, excluding awns):

cm Taller Than Penawawacm Shorter Than Alpowa

\* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

## 10. STEM:

## A. ANTHOCYANIN

1 = Absent

2 = Present

## D. INTERNODE (SPECIFY NUMBER)

1 = Hollow

2 = Semi-solid

3 = Solid

## B. WAXY BLOOM

1 = Absent

2 = Present

## E. PEDUNCLE

1 = Absent

2 = Present

## C. HAIRINESS (last internode of rachis)

1 = Absent

2 = Present

cm Length

## 11. HEAD (at Maturity):

## A. DENSITY

1 = Lax

3 = Dense

2 = Middense

## C. CURVATURE

1 = Erect

2 = Inclined

3 = Recurved

## B. SHAPE

1 = Tapering

3 = Clavate

2 = Strap

4 = Other (SPECIFY):

## D. AWNEDNESS

1 = Awnless

2 = Apically Awnletted

3 = Awnletted

4 = Awned

## 12. GLUMES (at Maturity):

## A. COLOR

1 = White

2 = Tan

3 = Other (SPECIFY):

## C. BEAK

1 = Obtuse

2 = Acute

3 = Acuminate

## B. SHOULDER

1 = Wanting

3 = Rounded

5 = Elevated

2 = Oblique

4 = Square

6 = Apiculate

## D. LENGTH

1 = Short

(ca. 7mm)

3 = Long (ca. 9mm)

2 = Medium

(ca. 8mm)

12. GLUMES (at Maturity) *Continued*:

## E. WIDTH

☒ 1 = Narrow (ca. 3mm)    2 = Medium (ca. 3.5mm)  
 3 = Wide (ca. 4mm)

## 13. SEED:

## A. SHAPE

☒ 1 = Ovate    2 = Oval    3 = Elliptical

## B. CHEEK

☒ 1 = Rounded    2 = Angular

## E. Color

☒ 1 = White    2 = Amber    3 = Red  
 4 = OTHER (Specify)

## F. TEXTURE

☒ 1 = Hard    2 = Soft

## C. BRUSH

☒ 1 = Short    2 = Medium    3 = Long

☒ 1 = Not Collared    2 = Collared

## D. CREASE

☒ 1 = Width 60% or less of Kernel  
 2 = Width 80% or less of Kernel  
 3 = Width Nearly as Wide as Kernel

☒ 1 = Depth 20% or less of Kernel  
 2 = Depth 35% or less of Kernel  
 3 = Depth 50% or less of Kernel

G. PHENOL REACTION (*see instructions*):

☒ 1 = Ivory    2 = Fawn  
 3 = Light Brown    4 = Dark Brown  
 5 = Black

## 14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

☒ Stem Rust (*Puccinia graminis* f. sp. *tritici*)

☒ Leaf Rust (*Puccinia recondita* f. sp. *tritici*)

☒ Stripe Rust (*Puccinia striiformis*)

☒ Loose Smut (*Ustilago tritici*)

☒ Tan Spot (*Pyrenophora tritici-repentis*)

☒ Flag Smut (*Urocystis agropyri*)

☒ Halo Spot (*Selenophoma donacis*)

☒ Common Bunt (*Tilletia tritici* or *T. laevis*)

☒ *Septoria nodorum* (Glume Blotch)

☒ Dwarf Bunt (*Tilletia controversa*)

☒ *Septoria avenae* (Speckled Leaf Disease)

☒ Karnal Bunt (*Tilletia indica*)

☒ *Septoria tritici* (Speckled Leaf Blotch)

☒ Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)

☒ Scab (*Fusarium* spp.)

☒ "Snow Molds"



14. Disease (Continued) (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

## PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> "Black Point" (Kernel Smudge)   | <input type="checkbox"/> Common Root Rot ( <i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.) |
| <input type="checkbox"/> Barley Yellow Dwarf Virus (BYDV)           | <input type="checkbox"/> Rhizoctonia Root Rot ( <i>Rhizoctonia solani</i> )                                 |
| <input type="checkbox"/> Soilborne Mosaic Virus (SBMV)              | <input type="checkbox"/> Black Chaff ( <i>Xanthomonas campestris</i> pv. <i>translucens</i> )               |
| <input type="checkbox"/> Wheat Yellow (Spindle Streak) Mosaic Virus | <input type="checkbox"/> Bacterial Leaf Blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )          |
| <input type="checkbox"/> Wheat Streak Mosaic Virus (WSMV)           | <input type="checkbox"/> Other (SPECIFY)  |
| <input type="checkbox"/> Other (SPECIFY)                            | <input type="checkbox"/> Other (SPECIFY)  |
| <input type="checkbox"/> Other (SPECIFY)                            | <input type="checkbox"/> Other (SPECIFY)  |
| <input type="checkbox"/> Other (SPECIFY)                            | <input type="checkbox"/> Other (SPECIFY)  |

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

## PLEASE SPECIFY BIOTYPE (where needed)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Hessian Fly ( <i>Mayetiola destructor</i> ) | <input type="checkbox"/> Other (SPECIFY) |
| <input checked="" type="checkbox"/> Stem Sawfly ( <i>Cephus</i> spp.)           | <input type="checkbox"/> Other (SPECIFY) |
| <input type="checkbox"/> Cereal Leaf Beetle ( <i>Oulema melanopa</i> )          | <input type="checkbox"/> Other (SPECIFY) |
| <input type="checkbox"/> Russian Aphid ( <i>Diuraphis noxia</i> )               | <input type="checkbox"/> Other (SPECIFY) |
| <input type="checkbox"/> Greenbug ( <i>Schizaphis graminum</i> )                | <input type="checkbox"/> Other (SPECIFY) |
| <input type="checkbox"/> Aphids   | <input type="checkbox"/> Other (SPECIFY) |

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS

**“Challis”**  
Soft White Spring Wheat

**200200105**

**Table 2. Milling and baking quality characteristics of Challis compared to check varieties in the University of Idaho trials, 1998-2000.**

	1998			1999			2000		
	Flour		Cookie Diameter cm	Flour		Cookie Diameter cm	Flour		Cookie Diameter cm
	Protein %	Yield %		Protein %	Yield %		Protein %	Yield %	
<b>Challis</b>	<b>9.5</b>	<b>63.9</b>	<b>8.6</b>	<b>9.2</b>	<b>62.7</b>	<b>8.4</b>	<b>8.6</b>	<b>64.1</b>	<b>8.6</b>
Penawawa	10.1	60.3	8.4	9.4	60.2	8.4	8.8	62.1	8.6
Alpowa	9.5	59.5	8.3	9.4	59.9	8.2	8.7	62.6	8.5
Treasure	9.6	62.7	8.6	9.1	63.2	8.6	8.7	65.5	8.9



Western Plant Breeders, Inc, 8111 Timberline Dr., Bozeman, MT 59718

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

EXHIBIT E

STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S)  Western Plant Breeders, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  BZ 692-108	3. VARIETY NAME  Challis
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  8111 Timberline Drive Bozeman, MT 59718	5. TELEPHONE (include area code)  406-587-1218	6. FAX (include area code)  406-586-8247
7. PVPO NUMBER  200200105		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
10. Is the applicant the original owner? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, please answer one of the following:  a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country  b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country		
11. Additional explanation on ownership (if needed, use reverse for extra space):		

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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